

ABSTRACT

A high-power LED lamp uses an LED chip that can be larger than 1mm square. The chip has trenches that can convert light trapped in the semiconductor into light that passes through a major surface of the chip. The trenches include light-reflecting tracks joined to a chip terminal and feeding a semiconductor layer. The chip can have triangular light emitting elements that improve light extraction from the semiconductor. The elements can be fused, resulting in improved manufacture yield of chips. A 25 watt single chip lamp with a heat sink very close to the active region is described.

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